Management Technique

Aerospace spinoffs usually involve hardware, software or industrial processes, but there are other types of technology transfers. One of them is the highly efficient management method known as the "total integrated systems approach," a technique developed of necessity for managing extremely complex aerospace programs involving integration of a great many individual systems. These systems, developed at different times by many different companies, must not only work perfectly when separately tested, they must also perform compatibly when integrated into the complete prime system. The systems approach is essentially a carefully-considered, painstakingly-executed master plan for coordinated design, development and assembly of the multitude of elements that constitute the end product. Its intent is to eliminate the problems that may occur when the specific parts of a total functioning system fail to come together to provide the requisite performance of the prime system.

The systems approach has obvious applicability to management of similarly complex non-aerospace programs, and it is being applied by a number of companies which developed their project management and systems analysis techniques in work for NASA and other government agencies. One example is Ball Corporation, Muncie, Indiana, whose Ball Aerospace Division has been a major contractor on a number of space projects. The techniques developed and refined by Ball Aerospace are being applied by the parent company's Agricultural Systems Division in planning, designing, developing and managing major agricultural programs in the U.S. and developing countries.

The accompanying photos illustrate Ball Agricultural projects wherein the systems approach was employed. Shown below is an agricultural development in New Mexico. In the other photos, wheat and green crops dot once-barren areas of the Sahara Desert, made fertile by the largest center-pivot irrigation project ever undertaken in the North African desert.